

Remarks

In the outstanding Official Action, the Examiner:

- (1) objected to the drawings under 37 CFR 1.83(a);
- (2) objected to the disclosure and required correction;
- (3) objected to the Abstract of the disclosure;
- (4) rejected claims 2-4, 6-7, 11, 18, 20, 30 and 48 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention; and
- (5) rejected claims 1-50 under 35 USC 103(a) as being unpatentable over Yamazaki et al. in view of Fukaya et al.

In response to Item 1 above, Applicants respectfully traverse the objection to the drawings under 37 CFR 1.83(a).

Claims 2-4 and 36-39 each comprise apparatus for automated semiconductor device probing, the apparatus comprising at least one of (1) the probe assembly and (2) the semiconductor support fixture being selectively moveable in a plane substantially orthogonal to a line extending between the probe assembly and the semiconductor support fixture. Applicants submit that the drawings show the claimed apparatus in which either the probe assembly and/or the semiconductor support fixture are movable in a plane substantially orthogonal to a line extending between the probe assembly and the semiconductor support fixture.

Accordingly, reconsideration of the objection with respect to the drawings is respectfully requested.

Claim 8 comprises apparatus for automated semiconductor device probing wherein the first attachment mechanism provides a fail safe mechanism. Applicants assert that the fail safe mechanism includes the first attachment mechanism configured to prevent the probe assembly from being released from the machine vision system during a loss of power. Accordingly, Applicants assert that the feature of the first attachment mechanism providing a fail safe mechanism is shown in the drawing figures and reconsideration is respectfully requested.

With respect to Item 2 above, Applicants have now amended the specification so as to correct the disclosure at page 10, lines 3 and 4 by changing "second attachment mechanism 50" to -- first attachment mechanism 50 --. Accordingly, Applicants believe that the specification is allowable.

With respect to Item 3 above, Applicants have now submitted a new Abstract so as to provide more clear language. Accordingly, the Abstract is believed to be allowable.

With respect to Item 4 above, Applicants have now amended claims 7, 11, 18, 20, 30 and 48 so as to more clearly define the present invention. Applicants respectfully traverse the rejection of claims 2-4 under 35 USC 112, second paragraph.

Claim 7 has now been amended to replace "first" with -- second -- so as to comprise apparatus for automated semiconductor device probing wherein the second attachment mechanism is an electromagnet. Claim 6 comprises apparatus for automated semiconductor device probing wherein the first attachment mechanism is an electromagnet. Accordingly, claims 6 and 7 are believed to be in condition for allowance, and allowance thereof is respectfully requested.

Claim 11 has now been amended to depend from claim 10 instead of claim 9. Claim 10 includes the feature of a motion stage. Accordingly, claim 11 is believed to be in condition for allowance, and allowance thereof is respectfully requested.

Claims 18 and 20 have now been amended to change "said contact portion" to -- a contact portion --. Accordingly, claims 18 and 20 are believed to be in condition for allowance, and allowance thereof is respectfully requested.

Claim 30 has now been amended to change "said second attachment means" to -- said second attachment mechanism -- as suggested by the Examiner. Accordingly, claim 30 is believed to be in condition for allowance, and allowance thereof is respectfully requested.

Claim 48 has now been amended to change "detaching apart said probe assembly and said semiconductor support fixture" to -- releasing said probe assembly from said semiconductor support

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fixture -- so as to provide a more proper antecedent basis from claim 47. Accordingly, claim 48 is believed to be in condition for allowance, and allowance thereof is respectfully requested.

Claims 2-4 comprise apparatus for automated semiconductor device probing, the apparatus comprising at least one of (1) the probe assembly and (2) the semiconductor support fixture being selectively movable in a plane substantially orthogonal to a line extending between the probe assembly and the semiconductor support fixture. Applicants assert that the claims 2-4 clearly indicate that the probe assembly and/or the semiconductor support fixture are selectively movable in a plane substantially orthogonal to a line extending between the probe assembly and the semiconductor support fixture. Accordingly, reconsideration of claims 2-4 is respectfully requested.

With respect to Item 5 above, Applicants respectfully traverse the rejection of claims 1-50 under 35 USC 103(a) as being unpatentable over Yamazaki et al. in view of Fukaya et al.

Claim 1 of the present invention comprises apparatus for automated semiconductor device probing, the apparatus comprising a probe assembly having a first surface and a second surface in opposition to one another; a machine vision system having a first contact surface adjacent the probe assembly, the first contact surface having a first attachment mechanism to selectively attach together the probe assembly and the machine vision system; and a

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semiconductor support fixture for positioning the semiconductor device, the semiconductor support fixture having a second contact surface adjacent the second surface of the probe assembly, the second contact surface having a second attachment mechanism to selectively attach together the probe assembly and the semiconductor support fixture.

Applicants believe that Yamazaki et al. disclose an apparatus for inspecting characteristics of semiconductor chips, which includes a testing tray positioned by a servo motor, a CCD camera, upper and lower contacting fixtures, and contact probe pins. Applicants further believe that Yamazaki et al. do not disclose a probe assembly having a first surface and a second surface in opposition to one another, a machine vision system having a first attachment mechanism to selectively attach together the probe assembly and the machine vision system, and a semiconductor support fixture having a second attachment mechanism to selectively attach together the probe assembly and the machine vision system.

Applicants believe that Fukaya et al. disclose a semiconductor device testing carrier having a supporting body to thrust a semiconductor device against a substrate having a plurality of contact terminals and a plurality of testing wiring patterns. Applicants further believe that Fukaya et al. teach away from the present invention in that a location recognizing

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camera 55 is disposed between the testing wiring substrate 41 and the holding wiring substrate 51. Location recognizing camera 55 is believed to be removed from therebetween at an appropriate timing. (See column 15, line 51 to column 16, line 7.)

Applicants believe that neither Yamazaki et al. nor Fukaya et al. disclose apparatus for automated semiconductor machine device probing comprising a vision system having a first attachment mechanism to selectively attach together the probe assembly and the machine vision system. Claim 1 is believed to be in condition for allowance, and allowance thereof is respectfully requested.

Claims 2-34, which depend either directly or ultimately from independent claim 1, are believed to be in condition for allowance at least for the above-identified reasons. Accordingly, allowance of claims 2-34 is respectfully requested.

Claim 35 of the present invention comprises a method for automated semiconductor device probing, the method comprising providing apparatus comprising a machine vision system having a first attachment mechanism to selectively attach together the probe assembly and the machine vision system. Applicants believe that, as discussed hereinabove, neither Yamazaki et al. nor Fukaya et al. either alone or in combination with one another disclose a method for automated semiconductor device probing, the method comprising providing apparatus comprising a machine vision

system having a first attachment mechanism to selectively attach together the probe assembly and the machine vision system. Accordingly, claim 35 is believed to be in condition for allowance, and allowance thereof is respectfully requested.

Claims 36-50, which depend either directly or ultimately from independent claim 35, are believed to be in condition for allowance for the above-identified reasons. Accordingly, allowance of claims 36-50 is respectfully requested.

In the event that any additional fees may be required in this matter, please charge the same to Deposit Account No. 16-0221.

Respectfully submitted,

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